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ABSTRACT

Designed for quick, easy identification of some of the most commonly encountered organisms found in and around the school ground, this illustrated guide identifies by a picture and a short biological description the common animals and plants found in and around school lawns, house lawns, parks, fence rows, flower gardens, vacant lots, and foundation plantings. Some of the drawings include a size. The food preferences for the animals are indicated, and the life cycle classification is given for the plants. The organisms are grouped according to the following pattern: small flying animals (dragonflies, mosquitoes, aphids); small non-flying animals (ladybug, spiders, earthworms); big animals (frogs, birds, dogs); non-grass plants (dandelion, clover, plantain); grass-plants (crabgrass, bluegrass, foxtail); fungi (mushrooms); and trees and shrubs (maple, juniper, barberry). A glossary of terms is at the back of the guide. (Author/CM)

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# SCHOOL GROUND GUIDE

A PICTURED GUIDE FOR IDENTIFYING COMMON ORGANISMS FOUND IN AND AROUND THE SCHOOL GROUND.

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Rodney Bain
The University of Western Ontario

U.S. DEPARTMENT OF EDUCATION
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# SCHOOL GROUNDS GUIDE

A pictured guide for identifying common organisms found in and around the school grounds.

Trial Edition, March 1980

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Author and Illustrator.

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## Introduction

This School Grounds Guide was made possible by a research grant from The University of Western Ontario. Much capable assistance has been given by June Lapp, Secretary for the Mathematics-Science Department, and from Mike Johnson, Coordinator of Environmental Studies for the London and Middlesex County R.C.S.S.Board. The cover design is the work of Les Ste. Marie, Media Work Centre.

Lists of the organisms found in and around five school grounds were generated using appropriate on site biological sampling techniques. Following the collection of the organisms, or in some cases noting presence, the organisms were ordered for the most frequently occurring species. Identity of species was carefully checked using standard reference biological keys and texts. A listing of references used appears at the back of this guide.

The guide was designed for quick, easy identification of some of the most commonly encountered organisms found in and around the school grounds. Organisms normally seen through a microscope have not been included, but those that can be seen by the unaided eye have been. A small hand lens would be useful for extending the senses of the observer.

Identity of some of the organisms was difficult but rewarding, and I recommend this activity to those who wish to be careful observers. I am indebted to those authors consulted and listed. Those who wish more information about the organisms in this guide can refer to these publications. All are available at the Education Library, The University of Western Ontario.

1980 03 07
U.W.O.
Rodney Bain

P.S. Teachers who intend to reproduce any or all the contents are permitted to do so. In fact, I solicit and encourage it.

## Where To Use This Guide

This is a guide to the common animals and plants found in and around school lawns, house lawns, parks, fence rows, flower gardens, vacant lots and foundation plantings. The guide may not be specific enough in some cases, but one could determine the general type.

Plants are easy to observe. Animals on the move, or because of their secretive nature, or their nocturnal habits, are more difficult to observe. An insect net or baited insect traps will help to capture the small flying or non-flying insects. A hand lens will help to see details on the insect. Then you can release the insect. Larger animals should be just left where you find them. Simply make your observations there. If you do not see the animal look for other signs that it has been there. A piece of fur, a tunnel, some scats, something partly eaten or its tracks can let you know of its presence. It is not necessary to collect the plants. A simple sketch will do, so that you do not damage the environment any further.

## How To Use This Guide

The organisms have been grouped according to the following pattern:

A. Small Flying Animals
(dragonflies, mosquitoes, aphids)

B. Small Non-Flying Animals
(ladybug, spiders, earthworms)

C. Big Animals
(frogs, birds, dogs)

D. Non-Grass Plants
(dandelion, clover, plantain)

E. Grass-Plants
(crabgrass, bluegrass, foxtail)

F. Fungi
(mushrooms)

G. Trees and Shrubs
(maple, juniper, barberry)

Each organism can be identified by the picture and short biological description. Some of the drawings include a size. The food preferences for the animals are indicated and the life cycle classification is given for the plants. A glossary of terms is at the back of the guide. Since the guide is thin, one can easily flip the pages until the right page and picture is found.

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A. SMALL FLYING ANIMALS

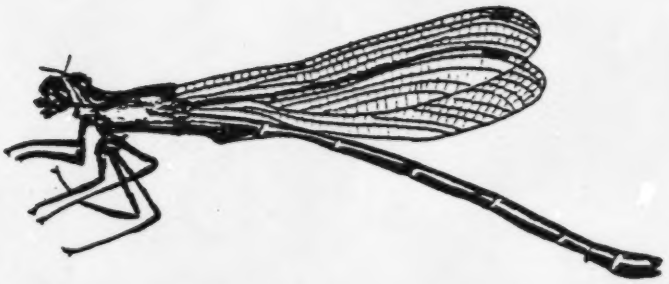
76 mm

DRAGONFLY

Green.
Can be brightly coloured.
Four transparent wings.
Very fast. Catch and eat flying insects on the move.

DAMSELFLY

Brilliant metallic green, but other shades are common also. Wings are together when resting Food consists of small flying insects.



42 mm

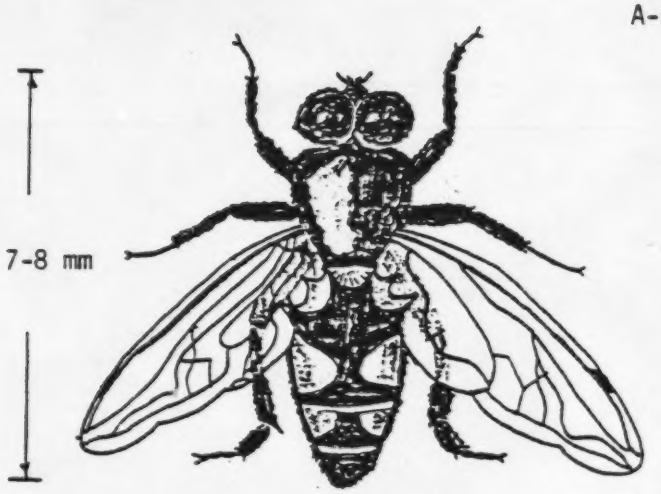
5.6 mm

FRIT FLY

Very small smooth flies. Numerous. Hover near lawn surface. Suck juices from grass stems.

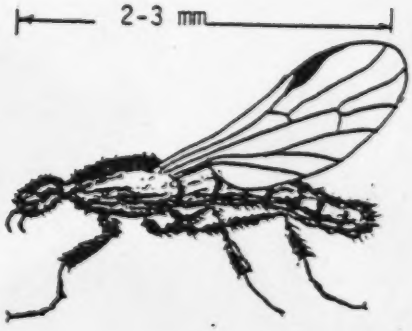
FLOWER FLY

Back with yellow markings.
Larvae eat plant lice.
Valuable pollinators. Look like bees.



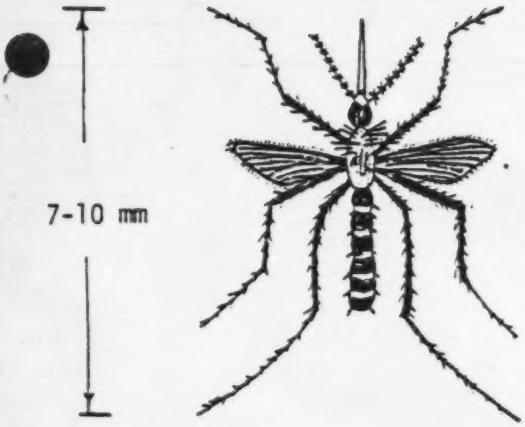
FUNGUS GNAT

Small, black, mosquito shaped flies.
Long legs.
Feed on decaying vegetation, including mushrooms.




MARCH FLY

Small, black, hairy.
Appear in decaying organic matter.

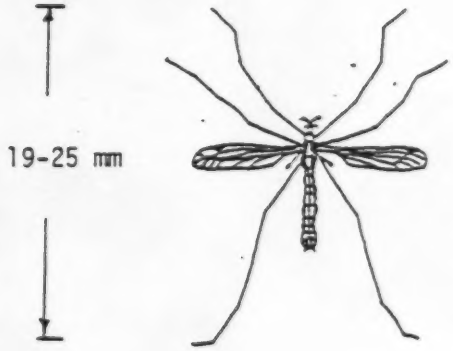



MOSQUITO

Reddish brown.
Slender, long legs.
Long piercing, sucking mouth parts.
Female require blood for young.
Males suck plant juices and nectar.

CRANE FLY

Orangish. Look like large mosquito. Abundant in damp grass. Adults feed on nectar, but larvae eat grassroots.



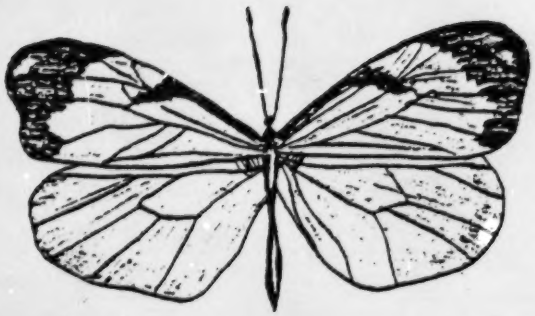
HONEY BEE

Hairy, yellow and black striped abdomen. Often found on clover, dandelions, mallow or other lawn flowers. Feed on nectar and pollen.

WASP

Head and thorax black.
Abdomen with some yellow.
Builds paper nest.
Some larvae are parasitic, living off a host insect.

17-22 mm



30-40 mm

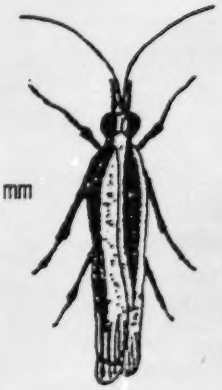
SULPHUR BUTTERFLY

Slender body with bright yellow or orange on white wings.
Adults often do not feed, but larvae feed on plant material.

LAWN MOTH

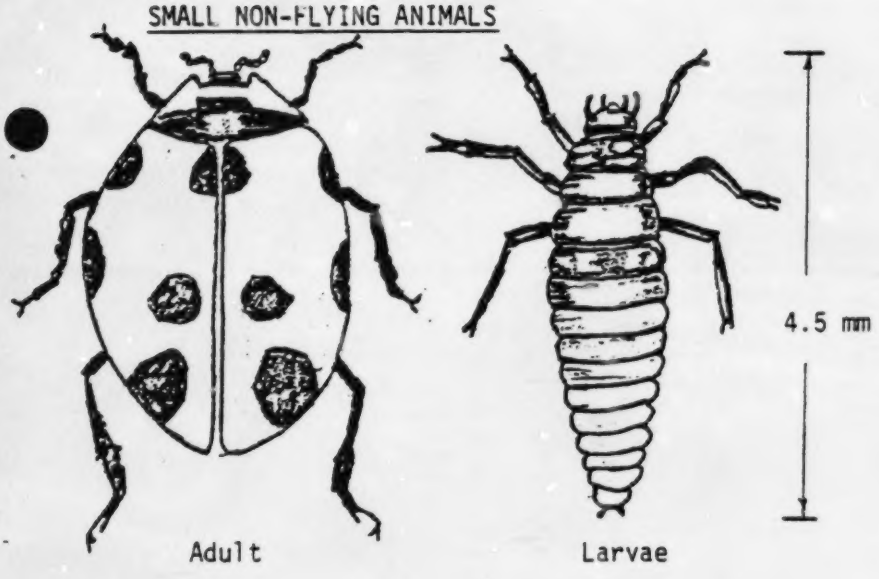
Common slender white or light gray moth found on lawns. Flies short distances.
Larvae feed on stems and grass roots.

10-12 mm



APHID

Small, round soft insects.
Certain generations grow wings.
Usually green. Often in large groups, sucking plant juices.

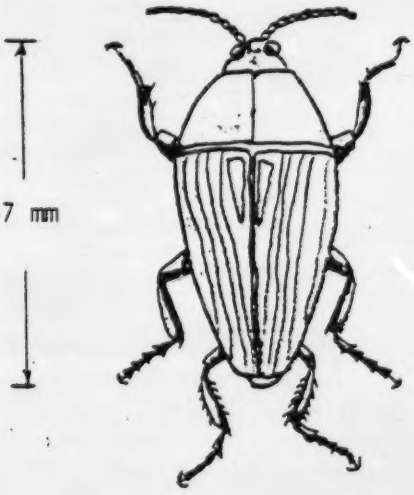



Adult

Larvae

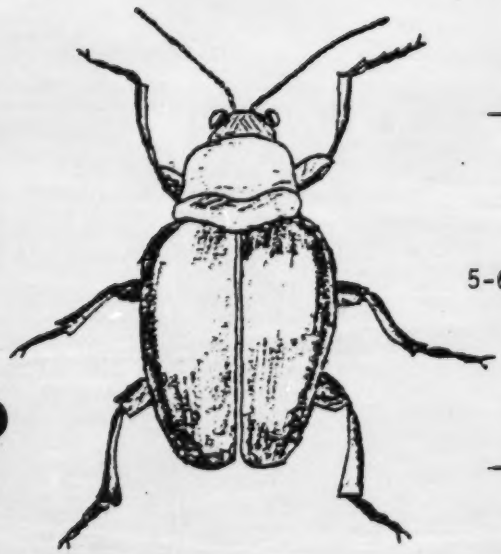
LADYBUG BEETLE

Very common, round, reddish orange beetles with black spots.
Found in the lawn.
Both larvae and adults feed on plant lice.




GROUND BEETLE

Abundant, bronzed, black, or purplish black.
Feed on other insects.
Active at night.

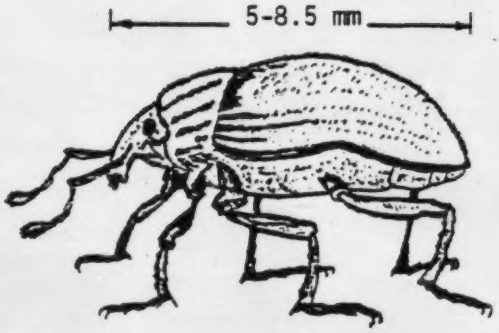



FLEA BEETLE

Common, metallic blue. Feed on leaves.

EARWIG

Common, brown. Hides in grasses in day, prowls at night
Forcepts are used for defence and seizing prey.

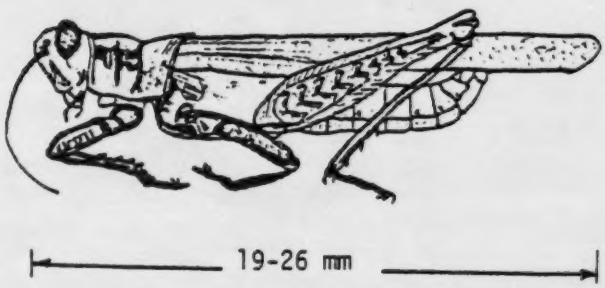


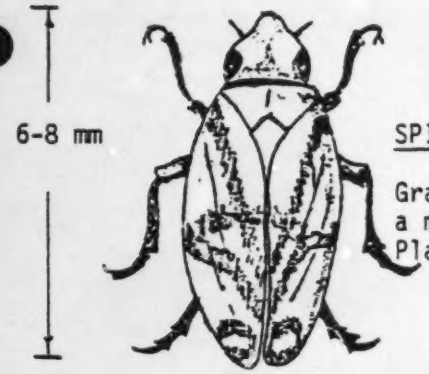

CLOVER LEAF BEETLE

Found in almost any clover patch.
Black, with a snout two-thirds as long as thorax.
Feed on plant materials.

RED LEGGED GRASSHOPPER

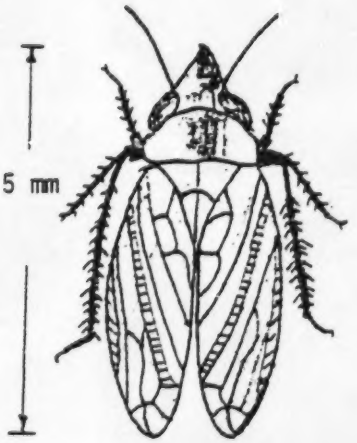
Long legged, usually green or brown.
Hind tibia (upper leg part) red.
Plant feeders.





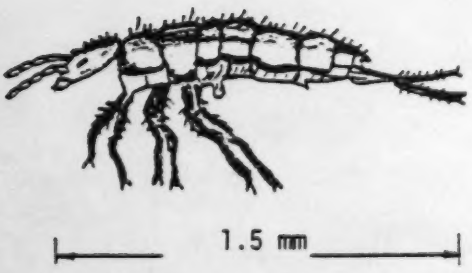

SPITTLE INSECT OR FROG HOPPER

Gray to brown. Nymphs hide themselves in a mass of foan on a stem or blade of grass. Plant feeders.




LEAF HOPPER

Exceedingly abundant. Slender, sharp-nosed, quick jumping. Suck plant leaf juices.



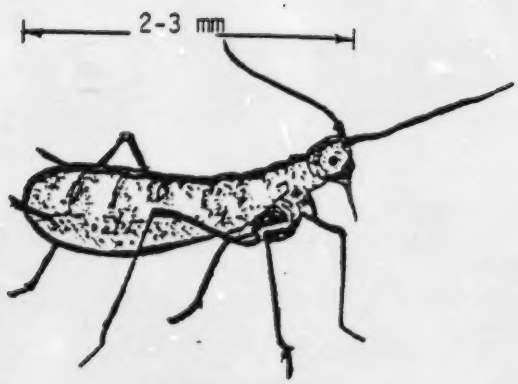

SPRINGTAIL

Very common. Gray to brown. Usually found in wet places and on surface of snow. Plant feeders and scavengers.

ANT

Common. Black or dark brown. Highly successful community life. Feed on everything from seeds to fungi.

APHIDS

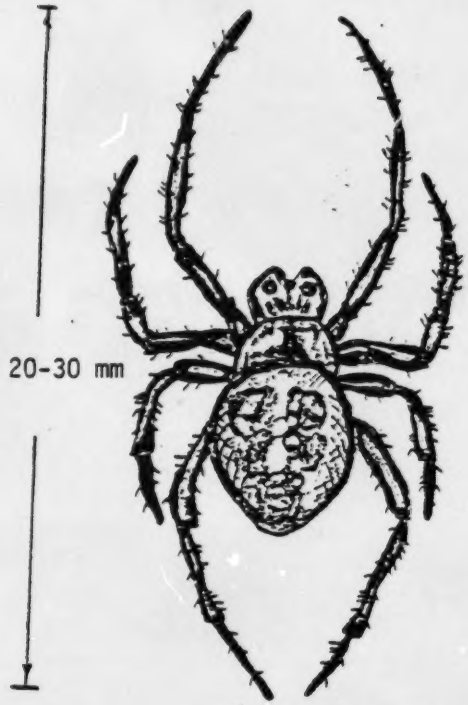


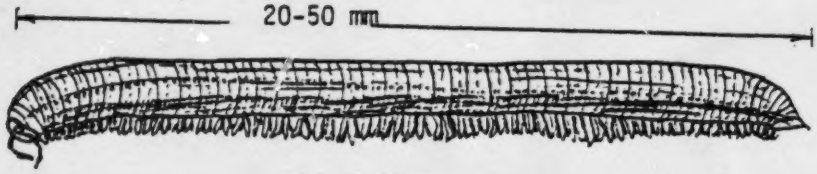

APHID

Numerous. Round, soft bodied. Usually green. Pass winter in egg stage, but are live-bearers during growing season. Feed on plant juicess. One above is enlarged

## GARDEN SPIDER

Commonly known. Large size, bright black and yellow. Sits at centre of web in open sunny places. Predators.



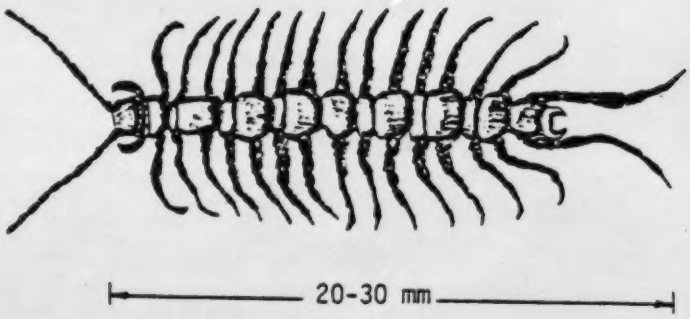




## MILLIPEDE

Black, wormlike animals with many legs, usually 2 pair per segment. Roll into a ball when disturbed. Scavengers.

## CENTIPEDE

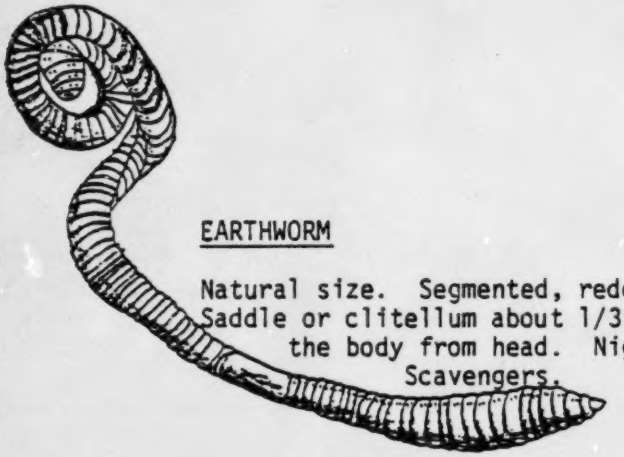
Orange, flattened wormlike animals with many legs, usually 1 pair per segment. Active and quick. Predators.



PILL MILLIPEDE

Dark gray, oval, armoured animals. Roll up into a ball or pill when disturbed. Found in cracks in cement and on lawns. Scavengers.

10 mm



EARTHWORM

Natural size. Segmented, reddish-brown. Saddle or clitellum about 1/3 of the way along the body from head. Night feeders. Scavengers.

GREY FIELD SLUG

Look like snails, except they have no coiled shell. Leave slime tracks. Scavengers.

40 mm

20 mm

BANDED SNAIL

Plentiful. Soft body with a hard spiral shell. Leave slime tracks on lawns and walks. Scavengers.

BIG ANIMALS

AMPHIBIANS

20-90 mm

TOAD

Dry skin, but covered with warts. Brown with blotches of white and grey. Predators.

20-110 mm

FROG

Smooth moist skin, with patches of black, on a green background. Under surface is white. Predators.

55-90 mm

SALAMANDER

Most common salamander. Hides beneath objects on the lawn in wooded areas. Underside is mottled a salt and pepper effect. Predators.

30 - 90 cm

GARTER SNAKE

A well known and common snake. Normally, 3 yellowish stripes. Need some damp ground for food finding. May cross the lawn on occasion in search of food. Predators.

CARDINAL

A common lawn visitor. Male is bright red with black face masks. Female is reddish-brown. Both have same song. Seed eater.

SHREW (natural size)

Dark brown-black. Very long nose. Eat earthworms and insect larvae. Tunnel into ground.

LONGTAILED FIELD MOUSE (natural size)

Dark brown. Does not tunnel, but lives under logs, strumps, rocks or previously formed holes. Seed eater and scavenger.

FIELD VOLE (Meadow Mouse) (natural size)

Dark brown. Widespread. Chunky. Ears are snuggled into the fur. Builds grass runways. Grass eater.

SQUIRREL

Popular lawn visitors. May be seen fedding or burying food there. May be grey, black, or brownish.

22-25 cm

DOG

Another popular lawn visitor. Does not eat on the lawn but often leaves feces which serves as food for other animals.

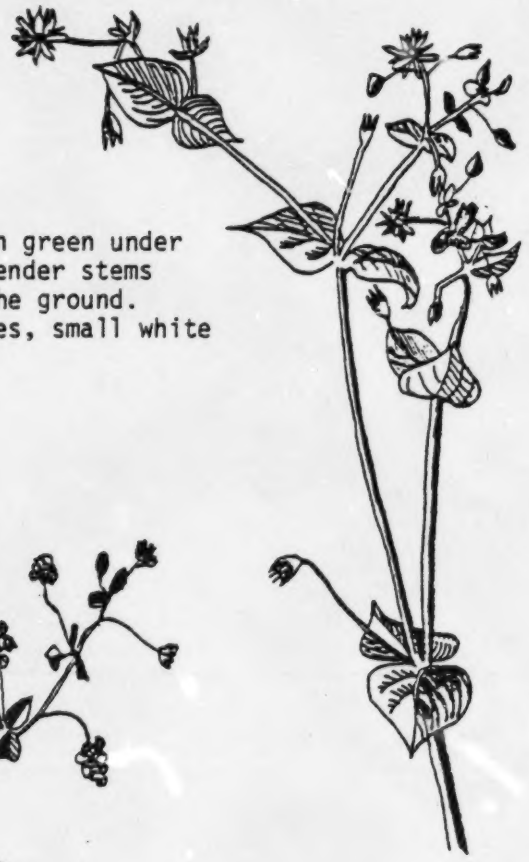
CAT

May search for small rodents on the lawn or along the fence row. Fecal material serves as a food source for smaller organisms.

MAN

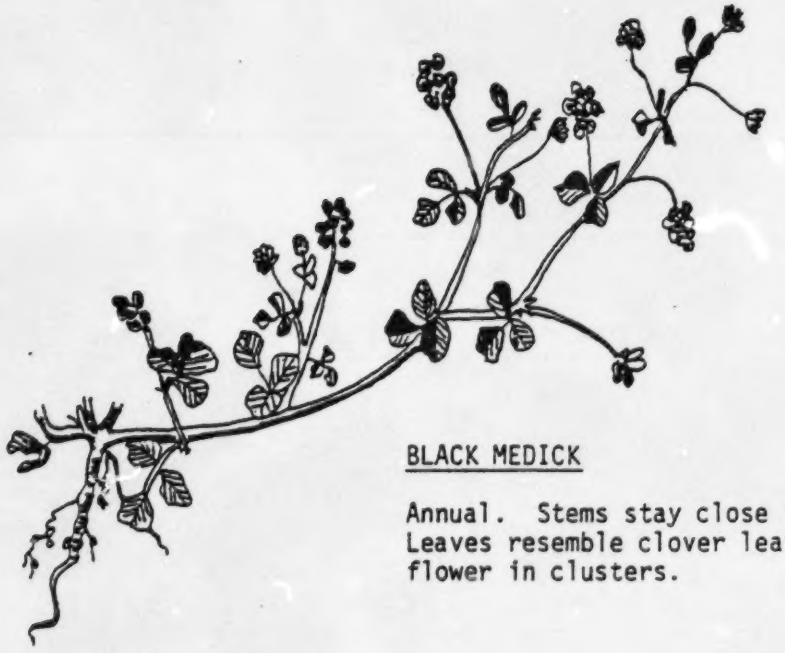
Very common. Very destructive. Cuts and removes grass. Pesticides and herbicides are used by man to kill living organisms. May damage or kill plants by walking on them.

## NON-GRASS PLANTS



### CHICKWEED

Annual. May remain green under the snow. Weak slender stems which may lie on the ground. Oval, pointed leaves, small white flowers.

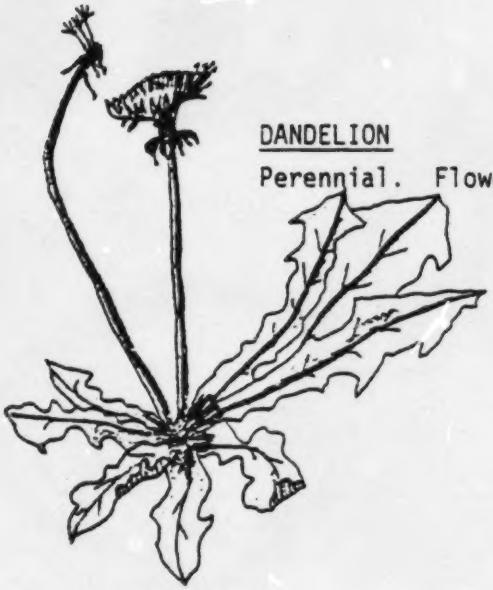


### BLACK MEDICK

Annual. Stems stay close to the ground. Leaves resemble clover leaves. Small yellow flower in clusters.

### DUTCH CLOVER

Perennial. Common. Three-lobed leaf. Low growing, roots at joints. Flowers are white, or red or pink. Often has bees around collecting nectar.



DANDELION

Perennial. Flowers of this well known plant are 2-5 cm in diameter and brilliant yellow. The ragged leaves are eaten as greens. Root is a familiar tap root.

SEDGE

Perennial. Very narrow and stiff-leaved plant. Looks grass-like but triangular stem is a key identity point. Has small cluster of green flowers growing at the base of 6 spike-like leaves. Wet places only.

MOSS

Annual. Very common all over northern hemisphere. Small, short, soft plants. Many plants to a patch. Found in wet or damp places. No flowers, but reproduces by spores.

WOOD-SORREL

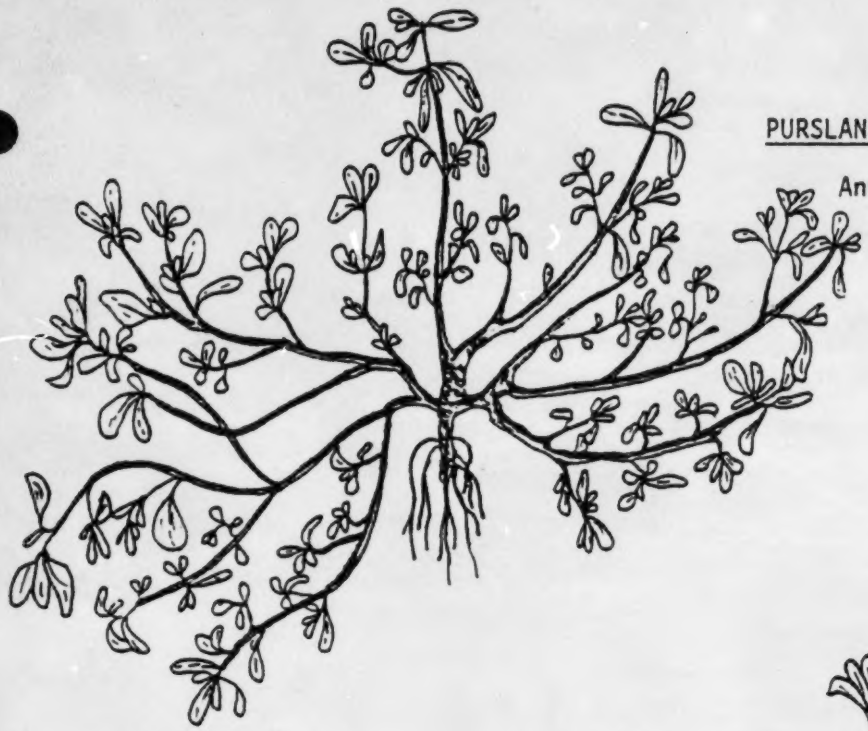
Perennial. A common plant of gardens, lawn edges, roadsides and waste places. Leaves are shamrock-like. Fruit, leaves, and stems have a pleasant sour taste.

KNOTWEED

Annual or biennial. Along paths, roadsides, lawns, where there is much tramping. Low growing and form a circular mat. Very small white flowers.

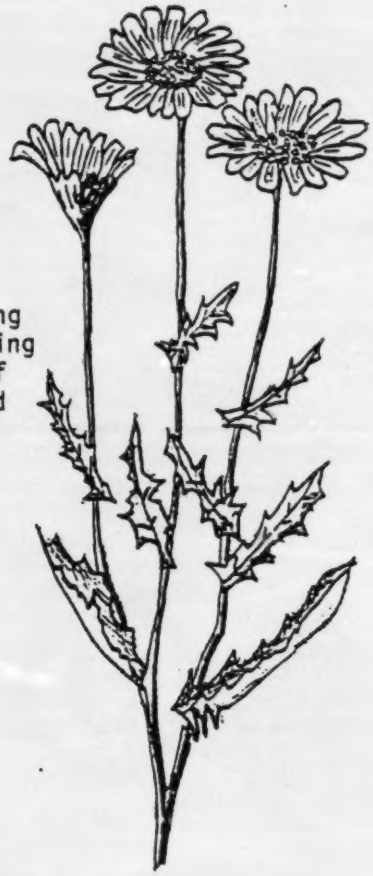
MALLOW

Annual or biennial. Stems low and spreading. Hairy, rounded leaves with heart-shaped bases. Small whitish or slightly pinkish flowers.



PURSLANE

Annual. Low growing with thick, smooth, fleshy leaves. Forms a dense mat on the ground. Stems are smooth and reddish. Small yellow flowers.



DAISY

Perennial. Deeply lobed leaves and long stalks. The flowering head has a series of white flowers around the outside and a yellow centre.

BROADLEAF PLANTAIN

Perennial. Leaves lie close to the ground and are smooth and oval. Flower stalks may be 8-16 cm long and stick up from the centre of the plant.

NARROWLEAF PLANTAIN

Perennial. Long narrow leaves with parallel veins. Leaves are more erect than broad-leafed plantain. Long flower stalks.

CANADIAN THISTLE

Perennial. Many unstalked leaves. Leaves are indented and have spine-tips. Purplish flowers. Careful of how you touch this plant!

CREEPING CHARLIE

Perennial. The leaves are rounded and more or less kidney-shaped. The margins of the leaves have rounded teeth. The flowers are purplish.

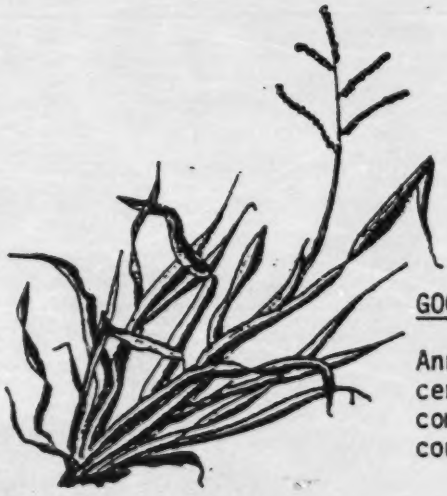
## GRASS PLANTS

### CRAB GRASS

Annual. Erect or spreading. Rather fat leaves and often hairy. Mature florets are purplish (fall). Flowering part may have 8-12 "fingers" in groups at top of plant.

### QUACK GRASS

Perennial. Best identity is by creeping whitish or yellowish underground stems which produce new stems at each joint. Stems can be pulled up for great distances.



### GOOSEGRASS

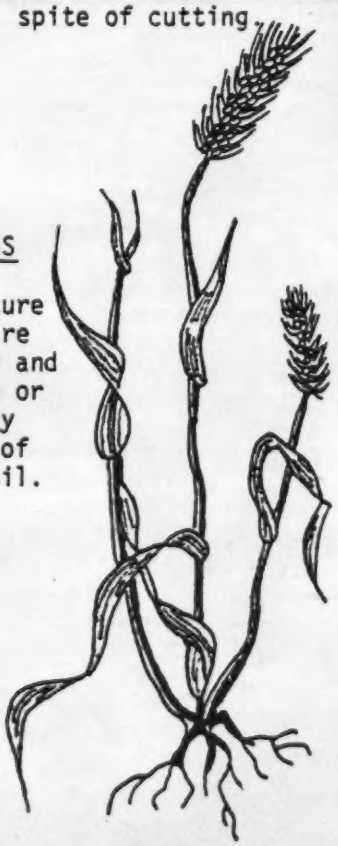
Annual. Low, thick mat of grass, growing from a central point. Grows in a pale green clump. Very common in disturbed ground. Flowers in spite of constant mowing.

RYEGRASS

Annual. Long narrow, dark green leaf. Plants tend to die out in hot weather. Form clumps. Very common and rapid growers.

KENTUCKY BLUEGRASS

Perennial. Very common and desirable lawn grass. Grows in clumps. Look for two parallel veins on upper surface of leaf. Will flower on lawns in spite of cutting.



FOXTAIL GRASS

Annual. Mature seed heads are very bristly and may be green or yellow. Very common weed of disturbed soil.

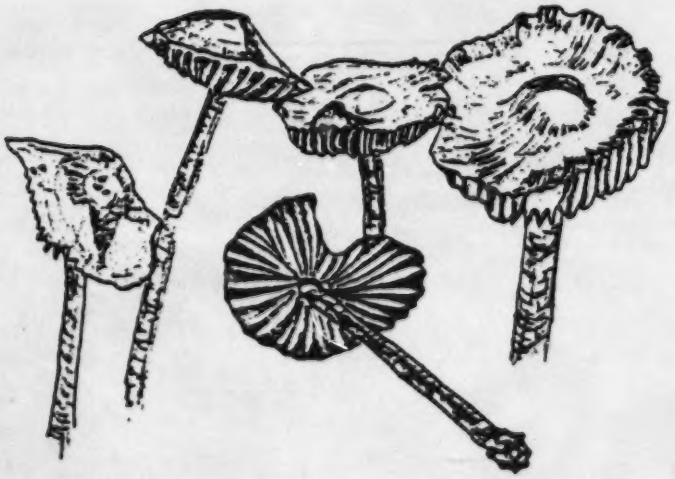
# FUNGI

## INKCAPS

Very common. One of the most delightful of all edible mushrooms. The cap is tall, cylinical, white, with many brownish scales. Becomes black and inky in age.

## MEADOW MUSHROOM

Very common. Found on lawns throughout North America. Delicious eating. Cap is white at first, with pink gills, then changes to a dingy brown in age.



## MARASMIUS OREADES

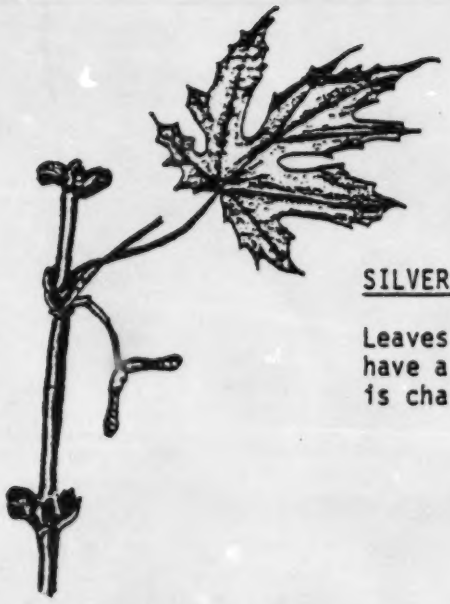
Very common. Grows in groups or fairy rings on lawns. Cap is dry, bell shaped and light tan in colour. It is a good edible.

RED ASH

Opposite, compound leaves. Fruit is a long, narrow samara. Bark is shallow-ridged and scaly. Twigs are stout and light grey in colour

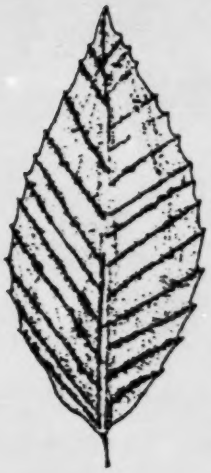
NORWAY MAPLE

Our most common maple for street or lawn planting. The leaf has 7 lobes, and not 5 as does the sugar maple. A milky juice can be squeezed out from a cut bud or leaf stalk.



SILVER MAPLE

Leaves are silvery white underneath. Smaller branches have a tendency to grow downward and then turn up again is characteristic. Bark is loosely scaled.

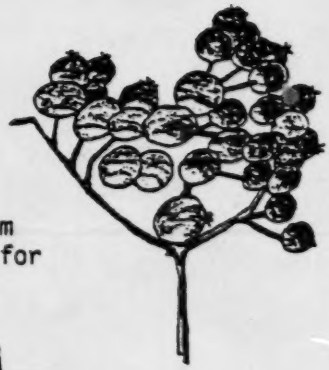


BEECH

The clean, smooth light grey bark of the trunk has made this tree well known. The tree-corned brown nut is edible. Twigs are slender and slightly zigzag.

ROWAN BERRY

This showy tree is used in ornamental plantings. Flowers are in white clusters and the berries are bright red-orange. The leaflets range in number from 11 to 17. Fruit is a favourite for winter birds.



BASSWOOD

This tree is a very common tree planted along city streets. The yellow flowers appear about July and make a fine tea. The brown nut-like berry can often be found in winter.

WHITE OAK

A tall stately trée with stout limbs. The leaves are deeply cut with rounded lobes and the fruit is a sweet edible nut.

BLACK WILLOW

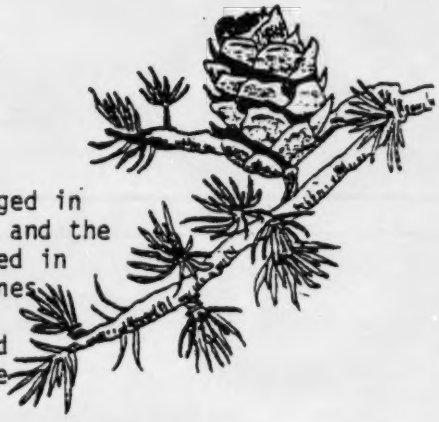
Willows are easily distinguished by their bitter bark and their buds which have a single cap-like scale. The twigs are slender and often brittle.

SYCAMORE

The bark is very distinctive with its mottled patched of white, yellow and green. The fruit is about 3 cm in diameter and is composed of many nutlets packed together.

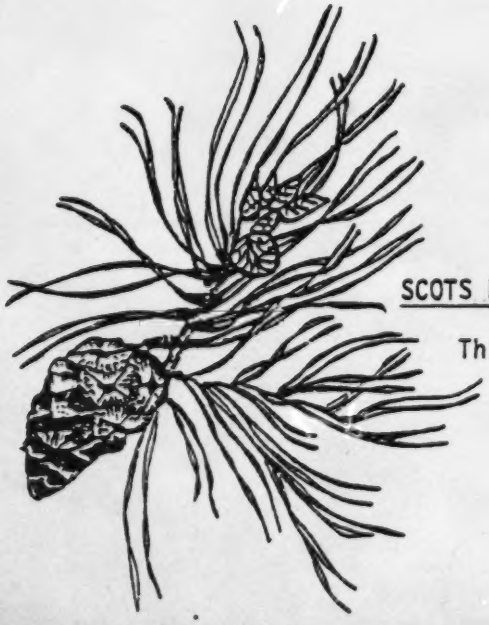
SPRUCE

Stiff, sharp pointed needles help to identify the spruce. The male cones are shown on the twig and the mature at the left is often taken apart by squirrels searching for the seeds within.



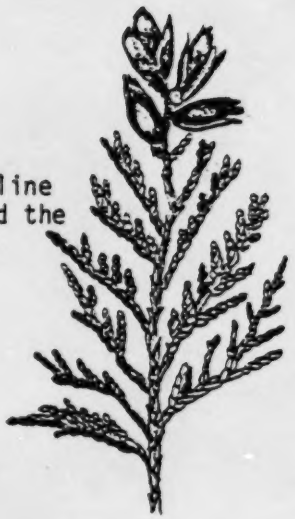
TAMARACK

Needles are arranged in clusters of 12-20 and the needles are dropped in the fall. The cones are small, about 1 cm in length and may be seen on the winter twigs.



SCOTS PINE

This is the popular Christmas tree and lawn ornamental tree. The needles come in pairs, are twisted and measure 5-6 cm long.



CEDAR

Leaves are scale-like and somewhat flattened. The outline of the tree is triangular and the tree is often used in hedges and foundation planting.

JUNIPER

The leaves are similar to the cedar, having a scale-like pattern, but on young twigs, the pointed needles are found. These leaves may be in pairs or whorls of three.

YEW

Female flowers and fruit are shown on this twig. Needles are very dark green, flat and sharp pointed. Fruit is a bright red berry, and it is not edible. Look for all 3 of these shrubs around buildings.

MUGHO PINE

A small pine that grows within 1 m in height and spreads across the ground. The needles are very dark green, in groups of 2 and tend to mound or cluster

EUONYMUS

Most varieties hold their leaves throughout the winter. The variety shown here has a dark green and gold leaf making it an attractive foundation plant. It grows in a fairly dense globe shape about a meter in diameter.

BARBERRY

Arching branches, deep green or red leaves and bright red berries help to identify this shrub. The spines are very sharp. Some species harbour wheat rust, but most nursery species do not.

## GLOSSARY

| | |
|---|---|
| Abdomen | -the last section of an insect |
| Annual | -plants that complete their life cycle from seed in one year |
| Biennial | -plants that do not flower until the second year. Complete life cycle in two years. |
| Clitellum | -a thickened secton of a body wall for egg production |
| Compound | -a group of leaflets having one bud for the group |
| Feces (fecal) | -body waste from anus |
| Floret | -one of the small flowers of a group of flowers |
| Herbicide | -a chemical used to kill plants |
| Herbivore | -an animal that eats plants |
| Larvae | -the worm-like stage of an insect |
| Nectar | -plant juice from the flower |
| Parasitic | -living off another plant or animal |
| Pesticide | -a chemical to kill small animals |
| Perennial | -plants that live longer than two years |
| Pollinator | -spreads pollen from flower to flower |
| Predator | -an animal that eats other animals |
| Runners | -long stems growing close to the ground, rooting and sending up new leaves and stems. |
| Scavengers | -an animal that eats dead or decaying plant or animal matter |
| Spores | -function is similar to a seed |
| Whorl | -a group of leaves in a circle around a stem. |

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